REMARKS

Claims 1 and 8 have been amended. New claims 16-19 have been added. Thus, claims 1-19 are presented for examination. Support for the claim amendments in the present specification are as follows:

Claim 1: page 17, paragraph [0027].
Claim 8: page 17, paragraph [0043].
Claim 16: page 17, paragraph [0027].
Claim 17: page 17, paragraph [0030].
Claim 18: page 17, paragraph [0043].
Claim 19: page 17, paragraph [0045].

Thus, no new matter has been added. Reconsideration and withdrawal of the present rejections in view of the comments presented herein are respectfully requested.

Rejections under 35 U.S.C. 102(b)

Claims 1-9, 11 and 13-14 were rejected under 35 U.S.C. §102(b) as being anticipated by Watanabe et al. (JP 09-160246).

Claim 1 relates to a base material for a pattern-forming material, a positive resist composition, and a method of resist pattern formation that are capable of forming a high resolution pattern with reduced levels of LER by using a low molecular weight compound as a main component of the base material. Present claim 1 includes the following characteristics:

(1) A base material for a pattern-forming material, comprising a low molecular weight compound (X1), which is formed from a polyhydric phenol compound (x) that comprises two or more phenolic hydroxyl groups and satisfies a molecular weight within a range from 300 to 2,500, a molecular weight dispersity of no more than 1.5, and an ability to form an amorphous film using a spin coating method, wherein either a portion of, or all of, said phenolic hydroxyl groups are protected with acid dissociable, dissolution inhibiting groups, wherein

(2) the proportion within said base material of said low molecular weight compound (X1), in which either a portion of, or all of, said polyhydric phenol compound (x) are protected with acid dissociable, dissolution inhibiting groups, is in the range 80% by weight to 100% by weight.

In recent years, with the rapid miniaturization of patterns, roughness is becoming a more serious problem. However, the polymers typically used as base materials have a large root mean

squared radius per molecule of several nm. As a result, as long as polymers are used as the base material component, reductions in LER will remain extremely difficult to achieve (specification at page 3, lines 4-8).

The base material recited in present claim 1 addresses these problems by including the low molecular weight compound (X1) at proportion of no less than 80% in the base material. In other words, Claim 1 of the present application uses this low molecular weight compound as the main component of the base material.

Watanabe et al. discloses a chemically amplified resist composition including a polymer compound having repeating units represented by a formula (1) as a base resin, a photoacid generator and a dissolution controlling agent. Although Watanabe et al. discloses a compound that has two or more phenolic hydroxyl groups as the dissolution controlling agent, an additive amount of the dissolution controlling agent is within a range of 5 to 50 parts, per 100 parts of the base resin (Watanabe et al., paragraph 64). Thus, the main component in the base material of Watanabe et al. is the base resin, not the low molecular weight compound as recited in present claim 1. In addition, Watanabe et al. neither discloses nor suggests using the dissolution controlling agent as the main component of the base material instead of the base resin. Since Watanabe et al. uses the base resin as the main component of the base material, the beneficial effects mentioned above cannot be achieved.

In addition, even when both the base resin and the dissolution controlling agent of Watanabe et al. are included as base materials, the proportion within the base material of the dissolution controlling agent is no more than 33.3 % (the base resin : 100 parts, dissolution controlling agent: 50 parts) which is outside the range recited in present claim 1 (in the range 80% to 100%). Thus, claim 1, and claims 2-7 and 16-17 which depend either directly or indirectly on claim 1, cannot be anticipated by Watanabe et al.

In view of the comments presented above, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. §102(b).

In addition, claims 1, 2-7 and 16-17 are not obvious over Watanabe et al. A positive resist composition containing a base material for a pattern-forming material having the above characteristics as a base component unexpectedly enables the formation of a fine pattern with reduced LER and a high level of resolution (English specification, page 38, lines 4-7). The beneficial effects resulting from the presence of low molecular

weight compound (X1) at proportion of no less than 80% in the base material would in no way be expected based on the disclosure of Watanabe et al. These unexpected results are strong evidence of the nonobviousness of the claimed invention, and would effectively rebut and *prima facie* case of obviousness if one were present.

Rejection under 35 U.S.C. 103(a)

Claims 8, 10, 12 and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Watanabe et al. (JP 09-160246) in view of Adegawa et al. (JP 2002-312055). The Examiner alleges that it would have been obvious to use the polyhydric phenol compound in the resist composition of Watanabe because Adegawa teaches resist compositions comprising a low molecular weight polyhydric phenol with a structure of formula 1 having improved sensitivity and high resolving power.

Present claim 8 includes the following characteristics:

(1) A base material for a pattern-forming material, comprising a protected material (Y1), which is formed from a polyhydric phenol compound (y) that comprises two or more phenolic hydroxyl groups and has a molecular weight within a range from 300 to 2,500, in which either a portion of, or all of, said phenolic hydroxyl groups are protected with acid dissociable, dissolution inhibiting groups, wherein

(2) the proportion within said base material of said protected material (Y1) is in the range 80% by weight to 100% by weight, and

(3) the proportion within said base material of an unprotected material (Y2), in which said phenolic hydroxyl groups of said polyhydric phenol compound (y) are not protected with acid dissociable, dissolution inhibiting groups, is no more than 20% by weight.

Thus, since the base material of the protected material (Y1) is no less than 80% by weight, then the low molecular weight compound is the main component of the base material. In addition, the proportion within the base material of the unprotected material (Y2) is no more than 20% by weight. Thus, the level of LER can be further reduced during pattern formation. Moreover, the resolution is also superior (present specification at page 27, lines 9 to 10).

Thus, a positive resist composition containing as a base component, a base material for a pattern-forming material according to the present invention enables the formation of a fine pattern with reduced LER and a high level of resolution (present specification at page 38, lines 4-7).

As described above, although Watanabe et al. (JP 09-160246) discloses a compound which has two or more phenolic hydroxyl groups as the dissolution controlling agent, the additive amount of the dissolution controlling agent is within a range of 5 to 50 parts, per 100 parts of the base resin (Watanabe et al., paragraph 64). Thus, the main component of the base material of Watanabe et al. is the base resin, not the low molecular weight compound as recited in present claim 8. Since Watanabe et al. uses the base resin as the main component of the base material, the beneficial effects mentioned above cannot be achieved.

Adegawa et al. (JP 2001-312055) discloses a chemically amplified resist composition comprising a low molecular dissolution inhibiting compound represented by a formula (IV). However, the proportion within the resist composition of the low molecular dissolution inhibiting compound is within a range of 3 to 45 % by weight (Adegawa et al., paragraph 231). The proportion within the resist composition of the resin is within a range of 40 to 99 % by weight (Adegawa et al., paragraph 230). A proportion within the resist composition of the acid generator is within a range of 0.1 to 20 % by weight (Adegawa et al., paragraph 73).

Even when both the resin and the low molecular dissolution inhibiting compound are base materials, the proportion within the base material of a low molecular dissolution inhibiting compound is no more than 52.9 parts by weight (the resin: 40% by weight; the low molecular dissolution inhibiting compound: 45% by weight), in contrast to present claim 8 in which the proportion of the low molecular weight compound at least 80% in the base material.

The same comments regarding the unexpected results presented above (formation of a fine pattern with reduced LER and a high level of resolution) with respect to Watanabe et al. also apply to the rejection over Watanabe et al. in view of Adegawa et al. These unexpected results would clearly establish the nonobviousness of Claim 8, even had the cited references established a *prima facie* showing of obviousness.

Since Claim 8 is nonobvious in view Watanabe et al. and Adegawa et al, claims 9-15 and 18 to 19, depend either directly or indirectly on Claim 8, are also nonobvious over these references.

In view of the comments presented above, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. 103(a).

CONCLUSION

Applicants submit that all claims are in condition for allowance. However, if minor matters remain, the Examiner is invited to contact the undersigned at the telephone number provided below. If any additional fees are required, please charge these to Deposit Account No. 11-1410. Should there be any questions concerning this application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Respectfully submitted,

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